=> d his

(FILE 'HOME' ENTERED AT 14:12:50 ON 10 MAR 2006)

FILE 'REGISTRY' ENTERED AT 14:12:59 ON 10 MAR 2006

L1 STRUCTURE UPLOADED

L2 0 S L1

L3 12 S L1 FULL

FILE 'CAPLUS' ENTERED AT 14:13:29 ON 10 MAR 2006

L4 2 S L3

=> d que 14 stat

L1 STR

Structure attributes must be viewed using STN Express query preparation.

L3 12 SEA FILE=REGISTRY SSS FUL L1

L4 2 SEA FILE=CAPLUS ABB=ON PLU=ON L3

=> d 1-2 bib abs hitstr

L4 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:243700 CAPLUS

DN 144:8075

TI Cationic azo dyes

AU Anon.

CS Switz.

SO IP.com Journal (2004), 4(9), 31 (No. IPCOM000030740D), 25 Aug 2004 CODEN: IJPOBX; ISSN: 1533-0001

PB IP.com, Inc.

DT Journal; Patent

LA English

PATENT NO. KIND DATE APPLICATION NO. DATE

PI IP 30740D 20040825

PRAI IP 2004-30740D 20040825

AB The present invention relates to the preparation and application of cationic azo dyes. Diazotized 4-methoxyaniline was coupled with imidazole and the product was dimethylated with Me2SO4 to give an azo compound which was then aminated with N,N,2,2-tetramethyl-1,3-propanediamine to provide a red dye for hair coloring.

TT 745818-60-4P 745818-62-6P 745818-68-2P

745818-70-6P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (dye; preparation of cationic azo dyes for hair coloring)

RN 745818-60-4 CAPLUS

CN 1H-Imidazolium, 2-[[4-[(2,2-dimethylpropyl)amino]phenyl]azo]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

• cl -

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 745818-62-6 CAPLUS

CN 1H-Imidazolium, 2-[[4-[(3-amino-2,2-dimethylpropyl)amino]phenyl]azo]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

$$\begin{array}{c|c}
Me \\
NH-CH_2-C-CH_2-NH_2\\
N\\
Me
\end{array}$$
Me

● cl -

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE RN 745818-68-2 CAPLUS

CN 1H-Imidazolium, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(imino-4,1-phenyleneazo)]bis[1,3-dimethyl-, difluoride (9CI) (CA INDEX NAME)

●2 F

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE RN 745818-70-6 CAPLUS

CN 1H-Imidazolium, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(imino-4,1-phenyleneazo)]bis[1,3-dimethyl-, diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 745818-69-3 CMF C27 H36 N10

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 71-50-1 CMF C2 H3 O2

IT 745818-63-7P 745818-64-8P

RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (red dye; preparation of cationic azo dyes for hair coloring)

RN 745818-63-7 CAPLUS

CN 1H-Imidazolium, 2-[[4-[(3-hydroxy-2,2-dimethylpropyl)amino]phenyl]azo]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

● c1-

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE RN 745818-64-8 CAPLUS

CN 1H-Imidazolium, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(imino-4,1-phenyleneazo)]bis[1,3-dimethyl-, dichloride (9CI) (CA INDEX NAME)

●2 Cl-

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IT 745818-61-5P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (red dye; preparation of cationic azo dyes for hair coloring)

RN 745818-61-5 CAPLUS

CN 1H-Imidazolium, 2-[[4-[[3-(dimethylamino)-2,2-dimethylpropyl]amino]phenyl]azo]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

● c1-

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

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L4
     ANSWER 2 OF 2 CAPLUS
                             COPYRIGHT 2006 ACS on STN
AN
     2004:722659 CAPLUS
DN
     141:226916
ΤI
     Cationic azo dyes particularly useful for dyeing human hair
IN
     Eliu, Victor Paul; Frohling, Beate
PA
     Germany
SO
     U.S. Pat. Appl. Publ., 42 pp.
     CODEN: USXXCO
DT
     Patent
     English
LΑ
FAN.CNT 1
     PATENT NO.
                          KIND
                                  DATE
                                              APPLICATION NO.
                                                                       DATE
                          ----
                                               _____
ΡI
                                  20040902
                                              US 2004-783256
     US 2004168265
                           Δ1
                                                                       20040220
     WO 2004076564
                                  20040910
                                              WO 2004-EP50132
                                                                       20040216
                           A1
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              GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
              LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI
         RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
              BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
              MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
              GQ, GW, ML, MR, NE, SN, TD, TG
     EP 1599550
                                              EP 2004-711378
                           A1
                                  20051130
                                                                       20040216
             AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
PRAI EP 2003-100445
                           Α
                                  20030225
     EP 2003-102284
                           Α
                                  20030724
     WO 2004-EP50132
                           W
                                  20040216
os
     MARPAT 141:226916
GΙ
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$$\begin{array}{c}
 & \text{Me} \\
 & \text{N} \\
 & \text{N} \\
 & \text{N}
\end{array}$$

$$\begin{array}{c}
 & \text{NH} \\
 & \text{R7} \\
 & \text{Me}$$

AB The cationic dyes can be represented by a general formula I, wherein R1, R7 are hydrogen, hydroxyl, unsubstituted or substituted C1-6 alkyl, aryl or alkoxy, or -NR3R 4, R3, R4 are hydrogen, unsubstituted or substituted aryl or C1-6 alkyl, R2 is hydrogen, hydroxyl, unsubstituted or substituted C1-6 alkyl, aryl or alkoxy, -NR3R4, or II, with R5=H, unsubstituted or substituted aryl or C1-6 alkyl, and X- is an anion. The dyes can be sued for compns., especially comprising other dyes, preferably for the use in human hair dyeing, as well as organic material, such as keratin, wool, leather, silk, cellulose or polyamides.

I

IT 745818-60-4 745818-61-5 745818-62-6

745818-63-7 745818-64-8 745818-68-2 745818-70-6

RL: TEM (Technical or engineered material use); USES (Uses) (in compns. containing cationic azo dyes and particularly useful for dyeing human hair)

RN 745818-60-4 CAPLUS

CN 1H-Imidazolium, 2-[[4-[(2,2-dimethylpropyl)amino]phenyl]azo]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

• cl-

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 745818-61-5 CAPLUS

CN 1H-Imidazolium, 2-[[4-[[3-(dimethylamino)-2,2-dimethylpropyl]amino]phenyl]azo]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

C1 -

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 745818-62-6 CAPLUS

CN 1H-Imidazolium, 2-[[4-[(3-amino-2,2-dimethylpropyl)amino]phenyl]azo]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

● cl-

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 745818-63-7 CAPLUS

CN 1H-Imidazolium, 2-[[4-[(3-hydroxy-2,2-dimethylpropyl)amino]phenyl]azo]-1,3-dimethyl-, chloride (9CI) (CA INDEX NAME)

● c1-

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 745818-64-8 CAPLUS CN 1H-Imidazolium, 2.2

1H-Imidazolium, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(imino-4,1-phenyleneazo)]bis[1,3-dimethyl-, dichloride (9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{Me} \\ \text{N} \\ \text{N} \\ \text{N} \\ \text{N} \\ \text{N} \\ \text{Me} \\ \\ \text{Me}$$

●2 Cl-

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 745818-68-2 CAPLUS

CN 1H-Imidazolium, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(imino-4,1-phenyleneazo)]bis[1,3-dimethyl-, difluoride (9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{Me} \\ \\ \text{N} \\ \text{Me} \\ \\$$

●2 F-

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE RN 745818-70-6 CAPLUS

CN 1H-Imidazolium, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(imino-4,1-phenyleneazo)]bis[1,3-dimethyl-, diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 745818-69-3 CMF C27 H36 N10

$$\begin{array}{c} \text{Me} \\ \\ \text{N} \\ \text{N} \\ \text{N} \\ \text{N} \\ \text{N} \\ \text{Me} \\ \\ \text{Me$$

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 71-50-1 CMF C2 H3 O2

=> => d que .	18 stat											
L5	27 SEA FILE=CAPLUS ABB=ON	PLU=ON ("ELIU VICTOR"/AU OR "ELIU										
	VICTOR PAUL"/AU)											
L6	4 SEA FILE=CAPLUS ABB=ON	PLU=ON "FROHLING BEATE"/AU										
L7	28 SEA FILE=CAPLUS ABB=ON	PLU=ON L5 OR L6										
L8	11 SEA FILE=CAPLUS ABB=ON	PLU=ON L7 AND CATIONIC										

=> d 1-11 bib abs

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L8
       ANSWER 1 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AN
       2005:564646 CAPLUS
DN
       143:83171
       Hair dyeing with capped diazotized compounds and coupling components
TI
       Eliu, Victor Paul; Froehling, Beate; Kauffmann, Dominique
IN
PA
       Ciba Specialty Chemicals Holding Inc., Switz.
       PCT Int. Appl., 79 pp.
SO
       CODEN: PIXXD2
DT
       Patent
       English
LA
FAN.CNT 1
                                                                  APPLICATION NO.
       PATENT NO.
                                     KIND
                                                 DATE
                                                                                                        DATE
                                                                    -----
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       WO 2005058840
                                       A2
                                                  20050630
                                                                   WO 2004-EP53335
                                                                                                        20041208
PΙ
       WO 2005058840
                                       A3
                                                  20050811
              W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
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             LK, LK, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
       GB 2409862
                                        A1
                                                  20050713
                                                                    GB 2004-27428
                                                                                                        20041215
PRAI EP 2003-104814
                                                  20031219
                                        Α
       MARPAT 143:83171
os
       The present invention relates to a method of coloring porous material,
AΒ
       which comprises contacting the material being colored, with a capped
```

AB The present invention relates to a method of coloring porous material, which comprises contacting the material being colored, with a capped diazonium compound containing a cationic radical of an organic compound, and a radical of an unsubstituted or substituted, aliphatic or aromatic amine, and optionally a coupling component. Further, the present invention relates to novel compds. and compns. thereof. Thus, a dye emulsion contained 0.01, cetearyl alc. 3.5, Ceteareth-80 1.0, glyceryl mono/distearate 0.5, stearamide DEA 3.0, stearamphopropyl sulfonate 1.0, Polyquaternium-6 0.5, and water qs to 100%.

Page 12

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L8
      ANSWER 2 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AN
      2005:116243 CAPLUS
DN
      142:204147
TI
      1,3-Disubstituted 2-(phenylazo)imidazolium cationic direct dyes
      and 2-(2-fluorophenylazo)imidazole for hair dyes
      Eliu, Victor Paul; Froehling, Beate
IN
      Ciba Specialty Chemicals Holding Inc., Switz.
PA
SO
      Brit. UK Pat. Appl., 126 pp.
      CODEN: BAXXDU
DT
      Patent
LA
      English
FAN.CNT 1
      PATENT NO.
                                 KIND
                                           DATE
                                                           APPLICATION NO.
                                                                                          DATE
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                                                           GB 2004-16150
PΙ
      GB 2404661
                                  A1
                                           20050209
                                                                                          20040720
                                                           WO 2004-EP51481
      WO 2005012437
                                           20050210
                                                                                          20040714
                                  A1
           W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
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                 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
           TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
                 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
                 SN, TD, TG
PRAI EP 2003-102286
                                  Α
                                           20030724
os
      MARPAT 142:204147
GI
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Me -- OSO3 -

AB Cationic 1,3-disubstituted 2-(phenylazo)imidazolium cationic direct dyes and 2-(2-fluorophenylazo)imidazole dyes are presented for hair dye compns. Further, the present invention relates to compns. thereof, especially comprising other dyes, to processes for the preparation

I

thereof and to the use thereof in the dyeing of organic material, such as keratin, wool, leather, silk, paper, cellulose or polyamides, especially keratin-containing fibers, cotton or nylon, and preferably human hair. Such compns. may comprise in addition (a) at least a single further direct dye and/or an oxidative agent, (b) at least a single oxidative dye or (c) at least a single oxidative dye and an oxidative agent. Dye I was prepared and solution containing I and Plantaren 2000 surfactant tested on human hair.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
L8
      ANSWER 3 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AN
      2004:1015862 CAPLUS
DN
      141:427743
      Method of hair dyeing by using diazonium compounds
TI
      Eliu, Victor Paul; Froehling, Beate; Kauffmann, Dominique
IN
PA
      Ciba Specialty Chemicals Holding Inc., Switz.
      PCT Int. Appl., 89 pp.
SO
      CODEN: PIXXD2
DT
      Patent
      English
LA
FAN.CNT 1
      PATENT NO.
                             KIND
                                      DATE
                                                   APPLICATION NO.
                                                                                DATE
                             _ _ _ _
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                                                    WO 2004-EP50707
                                                                                20040505
PΙ
      WO 2004100912
                              A2
                                      20041125
      WO 2004100912
                              A3
                                      20050210
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               CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
               GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
               LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
          NO, NZ, OM, PG, PH, PL, PT, RO, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
               SN, TD, TG
      US 2004231072
                               Α1
                                      20041125
                                                    US 2004-846901
                                                                                20040513
PRAI EP 2003-101364
                                      20030515
                               А
      EP 2003-104813
                                      20031219
OS
      MARPAT 141:427743
      Process of coloring porous material, which comprises applying to the
AΒ
      material being colored at least one capped diazonium compound and then
      causing the capped diazonium compound present on the material to react with
      the hair. In addition, novel dyeing compds. and compns. thereof are claimed.
      A strand of bleached human hair is treated with a mixture of equal parts by
      weight 5 g of 6% hydrogen peroxide solution and of the following composition:
the
      composition consisted of cetyl stearyl alc. 11.00, Oleth-5 5.0, oleic acid 2.5,
      stearic acid monoethanolamide 2.5, coconut fatty acid monoethanolamide
      2.5, sodium lauryl sulfate 1.7, 1,2-propanediol 1.0, ammonium chloride
      0.5, tetrasodium EDTA 0.2, perfume 0.4, wheat protein hydrolyzate 0.2,
      silica 0.1, 2,5-diaminotoluene sulfate 0.7, 4-amino-2-hydroxytoluene 0.5,
      2,5,6-triamino-4-hydroxypyrimidine sulfate 0.2, sodium sulfite 1.0,
      ascorbic acid 0.5, a triazene (preparation method given) 9.32, and water qs to
      100%.
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ANSWER 4 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
L8
AN
         2004:801976 CAPLUS
DN
         141:315835
         Cationic dimeric dyes having aminoazomethine or azo groups
TI
IN
        Eliu, Victor Paul; Frohling, Beate
PA
        Germany
        U.S. Pat. Appl. Publ., 48 pp.
so
         CODEN: USXXCO
DT
         Patent
        English
LA
FAN.CNT 1
                                            KIND
         PATENT NO.
                                                                             APPLICATION NO.
                                                        DATE
                                                                                                                      DATE
                                            ----
ΡI
        US 2004187231
                                                        20040930
                                                                             US 2004-801892
                                                                                                                      20040316
                                             A1
                                                                             WO 2004-EP50268
        WO 2004083312
                                             A2
                                                        20040930
                                                                                                                      20040308
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

                       TD, TG
                                                                           EP 2004-718316
        EP 1622686
                                             A2
                                                        20060208
                                                                                                                      20040308
                      AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
                       IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK
PRAI EP 2003-405185
                                             Α
                                                        20030318
        WO 2004-EP50268
                                                        20040308
os
        MARPAT 141:315835
GΙ
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$$Q^{1} = -\stackrel{+}{N} \qquad \stackrel{R^{3}}{\longrightarrow} \qquad \stackrel{R^{3}}{\longrightarrow} \qquad \stackrel{R^{2}}{\longrightarrow} \qquad \stackrel{R^{2}}{\longrightarrow} \qquad \stackrel{R^{2}}{\longrightarrow} \qquad \stackrel{R^{1}}{\longrightarrow} \qquad \stackrel{R^{1}}{$$

AB The present invention relates to cationic dyes I and II, wherein A is Q1 or Q2, wherein R1 and R2 are each independently of the other unsubstituted or substituted C1-C14 alkyl or an aryl radical, R3 is hydrogen, unsubstituted or substituted C1-C14 alkyl, unsubstituted or substituted C1-C14 alkoxy, cyano or halo, R4 is hydrogen, unsubstituted or

substituted C1-C14 alkyl or an aryl radical, and X- is an anion. Further, the present invention relates to compns. thereof, especially comprising other dyes, to processes for the preparation thereof and to the use thereof in the dyeing of organic material, such as paper and human hair with shades that are fast to washing, light, shampooing, and rubbing. A typical dye was manufactured by adding 16.5 g 4-pyridinealdehyde in 15 min to H2SO4 14, water 42, and α -methylphenylhydrazine 16.2 at 293K with stirring, stirring 1 h, adjusting the pH to 2.2 with aqueous NaOH, adding 2.7 g NaCl at 333K, stirring 1 h, dissolving the 39.3 g resulting hydrazone in 200 g iso-PrOH, adding 27 g 4,4'-bis(chloromethyl)biphenyl, heating to 338K, and stirring 5 h.

10/783,256

Page 17

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L8
      ANSWER 5 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ΑN
      2004:722659 CAPLUS
DN
      141:226916
ΤI
      Cationic azo dyes particularly useful for dyeing human hair
IN
      Eliu, Victor Paul; Frohling, Beate
PA
      Germany
      U.S. Pat. Appl. Publ., 42 pp.
SO
      CODEN: USXXCO
DT
      Patent
      English
LA
FAN.CNT 1
                                                          APPLICATION NO.
      PATENT NO.
                                KIND
                                          DATE
                                                                                        DATE
                                                          -----
                                 ----
PΙ
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                                          20040902
                                                          US 2004-783256
                                                                                         20040220
                                                          WO 2004-EP50132
      WO 2004076564
                                 Α1
                                          20040910
                                                                                         20040216
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      EP 1599550
                                 A1
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PRAI EP 2003-100445
                                  Α
                                          20030225
      EP 2003-102284
                                  Α
                                          20030724
      WO 2004-EP50132
                                  W
                                          20040216
os
      MARPAT 141:226916
GI
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$$\begin{array}{c|c}
 & \text{Me} \\
 & \text{N} \\
 & \text{$$

AB The cationic dyes can be represented by a general formula I, wherein R1, R7 are hydrogen, hydroxyl, unsubstituted or substituted C1-6 alkyl, aryl or alkoxy, or -NR3R 4, R3, R4 are hydrogen, unsubstituted or substituted aryl or C1-6 alkyl, R2 is hydrogen, hydroxyl, unsubstituted or substituted C1-6 alkyl, aryl or alkoxy, -NR3R4, or II, with R5=H, unsubstituted or substituted aryl or C1-6 alkyl, and X- is an anion. The dyes can be sued for compns., especially comprising other dyes, preferably for the use in human hair dyeing, as well as organic material, such as keratin, wool, leather, silk, cellulose or polyamides.

Ι

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L8
    ANSWER 6 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
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AN 2004:681015 CAPLUS

DN 141:191919

ΤI Cationic substituted hydrazone dyes, their production and their use on hair

IN Eliu, Victor Paul; Frohling, Beate

PA Germany

SO U.S. Pat. Appl. Publ., 44 pp.

CODEN: USXXCO

DTPatent

LA English

FAN.	CNT 1							
	PATENT NO.	KIND	DATE	APPLICATION NO.				
ΡI	US 2004158937	A1	20040819	US 2004-778478				
		A1		20040826 WO 2004-EP50101				
	WO 2004072183	C1	20041223					
				BA, BB, BG, BR, BW,	BY, BZ, CA, CH,			
	CN, CO	, CR, CU, C	CZ, DE, DK,	DM, DZ, EC, EE, EG	ES, FI, GB, GD,			
	GE, GH	, GM, HR, H	HU, ID, IL,	IN, IS, JP, KE, KG	KP, KR, KZ, LC,			
	LK, LR	, LS, LT, I	LU, LV, MA,	MD, MG, MK, MN, MW	MX, MZ, NA, NI			
	RW: BW, GH	, GM, KE, 1	LS, MW, MZ,	SD, SL, SZ, TZ, UG,	ZM, ZW, AT, BE,			
	BG, CH	, CY, CZ, I	DE, DK, EE,	ES, FI, FR, GB, GR	HU, IE, IT, LU,			
	MC, NL	, PT, RO, S	SE, SI, SK,	TR, BF, BJ, CF, CG,	CI, CM, GA, GN,			
	GQ, GW	, ML, MR, 1	NE, SN, TD,	TG				
	EP 1594922	A1	20051116	EP 2004-709247	20040209			
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	IE, SI	, LT, LV, 1	FI, RO, MK,	CY, AL, TR, BG, CZ	EE, HU, SK			
PRAI	EP 2003-405093	Α	20030217					
	WO 2004-EP5010	1 W	20040209					
OS GI	MARPAT 141:191	919						

Ι

$$R^{1}N$$
 $N-NR^{2}$
 R^{3}
 X^{-}

$$\begin{array}{c|c}
R^4 & & \\
+N & & \\
+N & & \\
R^1 & & \\
\end{array}$$
II

AB The invention relates to cationic dyes (I, II, and III; R1, R2 = C1-8-alkyl, optionally substituted benzyl; R3 = H, C1-8-alkyl, C1-8-alkoxy, CN, halo; R4 = C1-8-alkyl, optionally substituted aryl; X- = anion). The dyes have brilliant shades and good fastness on fibers, especially hair. In an example, phenylhydrazine was condensed with 4-acetylpyridine

and the resulting hydrazone was treated with Me2SO4 to give a brown dye.

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L8
     ANSWER 7 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
AN
     2004:203643 CAPLUS
DN
      140:240608
ΤI
     Diazonium compounds for hair coloring systems
IN
      Froehling, Beate; Eliu, Victor Paul
      Ciba Specialty Chemicals Holding Inc., Switz.
PA
      PCT Int. Appl., 138 pp.
SO
      CODEN: PIXXD2
DT
      Patent
LA
     English
FAN.CNT 1
                                                 APPLICATION NO.
                                                                             DATE
      PATENT NO.
                             KIND
                                     DATE
                                                   -----
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                                                 WO 2003-EP9417
ΡI
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                              A1
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               GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
          ES, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
      AU 2003258664
                                     20040319
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                              Α1
     EP 1534226
                                     20050601
                                                   EP 2003-790920
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                                     20051005
                                                   CN 2003-820700
                                                                              20030826
                                     20060112
                                                   JP 2004-532112
      JP 2006501248
                              T2
                                                                              20030826
PRAI EP 2002-405754
                              A
                                     20020902
      WO 2003-EP9417
                              W
                                     20030826
os
     MARPAT 140:240608
AB
     A method of coloring porous material, especially human hair, is described.
     method comprises applying to the material being colored, in any desired
      order successively, or simultaneously, (a) at least one capped diazonium
      compound, and (b) at least one cationic water-soluble aromatic coupling
      component, under conditions such that, initially, coupling does not take
      place, and then causing the capped diazonium compound present on the
     material to react with the coupling component. For example, preparation of a
      triazene dye was presented. 4-Chloro-2-amino-1-methylbenzene (43.4 g) was
     mixed with 81 g of 32% hydrochloric acid and cooled to 0. Then, over the
      course of 1 h, 75 mL of 4 N aqueous sodium nitrite solution were added
dropwise,
     with stirring, the temperature being maintained at 0-5. The resulting
solution was
      then added dropwise, over the course of 15 min, to an aqueous solution of 30 g
of
      sarcosine and 90 g of sodium carbonate in 250 mL of water at a temperature of
      0-5. The resulting brown suspension was filtered, the was recrystd. from
      ethanol and dried in air to afford 66.2 g of 3-methyl-1-(5-chloro-2-
     methylphenyl)-3-(carboxymethyl)triazene powder (yield: 91%). A strand of
     bleached human hair was immersed, for 30 min at room temperature, in an aqueous
      solution containing 0.2 M triazene and 0.2 M coupling component, which has been
      adjusted to pH 10.0 using sodium carbonate, ammonia or NaOH. The strand
     was removed, excess solution was wiped off and the strand was immersed for 5
     min in a pH 3 buffer solution containing 4% sodium citrate and 2% citric acid.
     The strand was then thoroughly rinsed using water and, where appropriate,
      a shampoo solution and was dried. Hair was colored with outstanding fastness
     properties, especially fastness to washing properties.
RE.CNT 11
                THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
```

ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 8 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
L8
      2004:203642 CAPLUS
AN
DN
      140:258598
      Diazonium compounds for hair coloring systems
ΤI
      Adam, Jean-marie; Yousaf, Taher; Froehling, Beate; Eliu, Victor
IN
PA
      Ciba Specialty Chemicals Holding Inc., Switz.
SO
      PCT Int. Appl., 147 pp.
      CODEN: PIXXD2
DT
      Patent
      English
LΑ
FAN.CNT 1
                                                       APPLICATION NO.
                                                                                    DATE
      PATENT NO.
                               KIND
                                        DATE
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                                                     WO 2003-EP9416
ΡI
      WO 2004019896
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A1 20040311 WO 2003-EP9416 20030826
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                                A1
                                        20040311
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                                                     AU 2003-267012
                                        20040319
      AU 2003267012
                                A1
                                                                                    20030826
                                        20050601
      EP 1534225
                                A1
                                                       EP 2003-747929
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      CN 1678284
                                Α
                                        20051005
                                                       CN 2003-820608
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      US 2005251932
                                A1
                                        20051117
                                                       US 2005-525300
                                                                                     20050214
PRAI EP 2002-405753
                                Α
                                        20020902
      WO 2003-EP9416
                                        20030826
      MARPAT 140:258598
OS
AB
      A method of coloring porous material, especially human hair, is described.
      method comprises applying to the material being colored, in any desired
      order successively, or simultaneously, (a) at least one capped diazonium
      compound, and (b) at least one water-soluble coupling component, under
      conditions such that, initially, coupling does not take place, and then
      causing the capped diazonium compound present on the material to react with
      the coupling component. For example, preparation of a triazene dye was
      presented. 4-Chloro-2-amino-1-methylbenzene (43.4 g) was mixed with 81 g
      of 32% hydrochloric acid and cooled to 0°. Then, over the course
      of 1 h, 75 mL of 4 N aqueous sodium nitrite solution were added dropwise, with
      stirring, the temperature being maintained at 0-5°. The resulting solution
      was then added dropwise, over the course of 15 min, to an aqueous solution of
3.0
      g of sarcosine and 90 g of sodium carbonate in 250 mL of water at a temperature
      of 0-5°. The resulting brown suspension was filtered, the was
      recrystd. from ethanol and dried in air to afford 66.2 g of
      3-methyl-1-(5-chloro-2-methylphenyl)-3-(carboxymethyl)triazene powder
      (yield: 91%). A strand of bleached human hair was immersed, for 30 min at
      room temperature, in an aqueous solution containing 0.2 M triazene and 0.2 M
coupling
      component, which has been adjusted to pH 10.0 using sodium carbonate,
      ammonia or NaOH. The strand was removed, excess solution was wiped off and
      the strand was immersed for 5 min in a pH 3 buffer solution containing 4%
sodium
```

citrate and 2% citric acid. The strand was then thoroughly rinsed using water and, where appropriate, a shampoo solution and was dried. Hair was colored with outstanding fastness properties, especially fastness to washing properties.

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 9 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
1.8
AN
      2003:696960 CAPLUS
DN
      139:231929
      Production and use of cationic azo dyes
TI
      Eliu, Victor Paul; Hauser, Julia
IN
PA
      Ciba Specialty Chemicals Holding Inc., Switz.
so
      PCT Int. Appl., 48 pp.
      CODEN: PIXXD2
DT
      Patent
      English
LA
FAN.CNT 1
                               KIND
                                                       APPLICATION NO.
      PATENT NO.
                                          DATE
                                                                                      DATE
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                                                      WO 2003-EP1732
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      WO 2003072657
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           ES, EI, EU, EV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
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      AU 2003208882
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      EP 1478696
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                                                          JP 2003-571351
      JP 2005519149
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      US 2005154195
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PRAI EP 2002-405145
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                                          20020228
      WO 2003-EP1732
                                 W
                                          20030220
os
      CASREACT 139:231929; MARPAT 139:231929
      A process for the preparation of certain cationic imidazolium azo
      dyes is disclosed as well as their use in dyeing of keratin-containing fibers,
      especially hair. The dyes are produced at lower temps. and in improved yields
      and more quickly than by prior-art methods. In an example, p-anisidine
      was treated with 1,3-dimethyl-2-(4-methoxyphenylazo)imidazolium chloride
      (I) to give a dye product in which the 4-methoxyphenylazo group of I is
      replaced by a 4-(4-methoxyanilino)phenylazo group.
```

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
2003:571066 CAPLUS
ΑN
         139:118725
DN
         Cationic dyes, their production and their use on hair
ΤI
         Eliu, Victor Paul; Froehling, Beate; Hauser, Julia
IN
         Ciba Specialty Chemicals Holding Inc., Switz.
PA
         PCT Int. Appl., 135 pp.
SO
         CODEN: PIXXD2
DT
         Patent
LA
         English
FAN.CNT 1
                                                                              APPLICATION NO.
         PATENT NO.
                                            KIND
                                                         DATE
                                                                                                                        DATE
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                                                                               WO 2003-EP68
         WO 2003060015
               2003060015

A1 20030724 WO 2003-EP68 20030107
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                                              A1
                                                          20030724
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PΙ
         AU 2003201617
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         EP 1468049
                                              A1
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                                              Α
         JP 2005514512
                                              T2
                                                         20050519
                                                                               JP 2003-560105
                                                                                                                         20030107
                                                                               US 2004-501576
         US 2005000034
                                              A1
                                                         20050106
                                                                                                                         20040713
PRAI EP 2002-405022
                                              Α
                                                         20020115
         WO 2003-EP68
                                              W
                                                         20030107
         MARPAT 139:118725
OS
GΙ
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ANSWER 10 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

$$R^{1-\frac{1}{N}}$$
 $N-N$
 R^{2}
 R^{3}

L8

AB The invention relates to cationic dyes (I; R1, R2 = C1-6-alkyl or optionally substituted benzyl, whereby at least one of R1 and R2 is optionally substituted benzyl; R3 = H, C1-6-alkyl, C1-6-alkoxy, CN, halogen, whereby R3 may not be H when R1 is benzyl and R2 is Me; X- = anion) and their production from 4-pyridinecarboxaldehyde and the appropriate phenylhydrazine derivative and alkylating or benzylating agent. I provide shades with good fastness and depth on hair. In an example, the hydrazone formed from 4-pyridinecarboxaldehyde and PhMeNNH2 was quaternized with PhCH2Cl to give an orange dye.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L8 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
- AN 1999:810889 CAPLUS
- DN 132:40313
- TI Hair dye compositions containing fatty acids and their esters with sugars and ethoxylated fatty alcohols
- IN Frohling, Beate; Golinski, Frank
- PA Goldwell G.m.b.H., Germany; KPSS KAO Professional Salon SE
- SO Eur. Pat. Appl., 10 pp. CODEN: EPXXDW
- DT Patent
- LA German
- FAN.CNT 1

		_																	
	PATENT NO.			KIND		DATE		1	APPLICATION NO.						DATE				
PI	ΕP	9653	24			A1		19991222		EP 1999-110868						19990607			
	EP 965324			B1 20031022															
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			ΙE,	SI,	LT,	LV,	FI,	RO											
	DE	1982	7434			A1		1999	1223	1	DE :	1998-	1982	7434		1:	9980	619	
	DE	1982	7434			C2		2000	0817										
	DE	1992	2851			A1		2000	1123]	DE :	1999-	1992	2851		1:	9990!	519	
	DE	1992	2851			C2	:	2003	1120										
	AT	2523	62			E	:	2003	1115	7	AT :	1999-	1108	68		1:	9990	607	
PRAI	DE	1998	-1982	27434	4	A		1998	0619										
	DE	1999	-1992	2285	1	Α		1999	0519										

- AB A hair dye emulsion contains 1.5-10% C10-18 fatty acid, 5-25 C10-22 fatty alc. ethoxylate and 5-30% liquid sugar fatty acid ester. The emulsion can be manufactured from the mixture of oil and water phases 15-35°. Thus, an aqueous phase contained 25% Nh3 13.50, SiO2 0.15, trisodium EDTA 0.30, NH4Cl 0.70, Na2SO3 1.50, ascorbic acid 0.30, cationic plant protein hydrolyzate 0.75, panthenol 0.90, hop extract 0.75, perfume 0.60, p-toluyldiamine sulfate 0.80, resorcinol 0.07, 4-chlororesorcinol 0.25, 3-aminophenol 0.03 and water to 100.0%. Sixty-eight parts of this composition were mixed with 32 parts of the following oil phase at 20-25°. Th oil phase contained oleic acid 31.2, laureth-2 37.5, and Me glucose dioleate 31.3%.
- RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d his full

L4

L8

(FILE 'HOME' ENTERED AT 14:12:50 ON 10 MAR 2006)

FILE 'REGISTRY' ENTERED AT 14:12:59 ON 10 MAR 2006

L1 STRUCTURE UPLOADED

ח

L2 0 SEA SSS SAM L1

L3 12 SEA SSS FUL L1

FILE 'CAPLUS' ENTERED AT 14:13:29 ON 10 MAR 2006

2 SEA ABB=ON PLU=ON L3

D QUE L4 STAT

D 1-2 BIB ABS HITSTR

E ELIU VICTOR/AU

L5 27 SEA ABB=ON PLU=ON ("ELIU VICTOR"/AU OR "ELIU VICTOR PAUL"/AU)

E FROHLING BEATE/AU

L6 4 SEA ABB=ON PLU=ON "FROHLING BEATE"/AU

L7 28 SEA ABB=ON PLU=ON L5 OR L6

11 SEA ABB=ON PLU=ON L7 AND CATIONIC

D QUE L8 STAT D 1-11 BIB ABS

FILE HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 9 MAR 2006 HIGHEST RN 876338-69-1 DICTIONARY FILE UPDATES: 9 MAR 2006 HIGHEST RN 876338-69-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

* The CA roles and document type information have been removed from * the IDE default display format and the ED field has been added, * effective March 20, 2005. A new display format, IDERL, is now * available and contains the CA role and document type information. * *

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

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FILE COVERS 1907 - 10 Mar 2006 VOL 144 ISS 12 FILE LAST UPDATED: 9 Mar 2006 (20060309/ED)

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